

# THEORETICAL AND UNIVERSAL IMPLICATIONS OF CERTAIN VERBAL ENTRIES IN DICTIONARIES OF THE MISUMALPAN LANGUAGES\*

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## 0. Introduction.

The lexicon is traditionally seen as the repository of what is ideosyncratic in a language. And this is to an extent accurate, inasmuch as the relation between a lexeme and the concept it names typically respects Saussurian arbitrariness (setting aside sound symbolism). Furthermore, and importantly, the lexicon is where irregularities (suppletions, unpredictable alternations, and so on) are registered. But there is another aspect of the lexicon, of course, which gives it the character of an entirely lawful system, like grammar—or more specifically, like syntax and the semantic interpretations determined by syntactic structure. This is the aspect of the lexicon known as "argument structure."

In the discussion to follow, some material from recent work in Misumalpan dictionary making is discussed. The focus is narrow, being restricted to argument structure, and further, to aspects of argument structure that are to some degree "active" in the lexicon and grammar of the languages. When they are completed, years from now in all likelihood, the Misumalpan dictionaries will be expected to serve many purposes, including, for example, those served by such impressive and exceptional resources as the recently published Hopi dictionary (The Hopi Dictionary Project, 1998) and the justly renowned Navajo dictionary of barely more than a decade earlier (Young and Morgan, 1987). Like these works, the Misumalpan dictionaries, if successful, will contribute to the general linguistic data base for the scientific study of regular and recurrent principles of grammar as projected from the lexicon. Predicate argument structure is one aspect of the lexicon governed by recurrent cross-linguistically valid principles. And the present discussion is intended as an introduction to some of the Misumalpan forms which might help in reaching an understanding of these principles and the parameters implicated in their variable expression in the languages of the world. As indicated, our focus here will be narrow—in particular, it will be on the grammatical factors involved in the lexical distribution of the well-known transitivity alternation exemplified, for example, by the labile Misumalpan (Ulwa) verb *birhdanaka* (intransitive) and *birhnaka* (transitive) and its similarly labile English equivalents *tear*

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and *rip*.

### 1. Argument structure.

Before introducing material from Misumalpan, we outline a general framework for the formulation of argument structure regularities, beginning with a definition of what we mean by the term. Here, the examples will come primarily from English.

By “argument structure,” we mean the syntactic configuration projected by a lexical item. Argument structure is the system of structural relations holding between heads (nuclei) and the arguments linked to them, as part of their entries in the lexicon. While a full lexical entry is clearly more than this, argument structure in the sense intended here is this alone. Departures from this simplifying assumption would have to be strongly motivated.

The following three examples can be used to illustrate the nature of the problems we will be concerned with—they represent three distinct and productive classes in the English verbal inventory.

- (1) (a) The colt sneezed.
- (b) The sky cleared.
- (c) This factory bottles water.

The verbs of these sentences have readily distinguishable syntactic characteristics, and we assume that their syntactic behavior is correlated in some precise way with their associated argument structure configurations, i.e., with the syntactic structures they project.

The properties which must be accounted for are the following, at least. The verb *sneeze* in (1a) is “unergative.” It is therefore superficially intransitive and moreover lacks a transitive counterpart of the type popularly termed “causative”:

- (2) \*The alfalfa sneezed the colt.

This property is shared by all canonical unergatives, including other evidently denominal verbs—*laugh*, *cough*, *smile*, *pup*, *cub*, *foal*, and so on. By contrast, the verb *clear* in (1b) is “unaccusative”. It is intransitive and has a transitive counterpart:

- (3) The wind cleared the sky.

The same is true of other unaccusatives, quite systematically those which are evidently deadjectival—*narrow*, *thin*, *widen*, *redden*, and so on. Finally, the verb *bottle* in (1c) has the property that it is transitive and has no intransitive counterpart (apart from the middle):

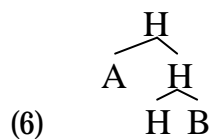
(4) \*The water bottled.

This verb belongs to a large class of denominal location and locatum verbs sharing this property—*box, bag, shelve; saddle, harness, clothe* (for these and other denominal verb types, see Clark and Clark, 1979).

To account for these observations, we make certain assumptions about argument structure, of which the principle ones are expressed informally in (5):

(5) Argument structure is defined in reference to two possible relations between a head and its arguments, namely the head-complement relation and the head-specifier relation.

For a given configuration, a complement is the unique sister of the head—e.g., B in (6), where H is the head. And a specifier is the unique sister of the first branching projection of the head—e.g., A is specifier in (6), where H dominating [H B] is the first branching projection of the head H:

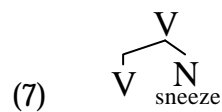


A given head may enter into one or both or neither of these relations. These are its argument structure properties, and its syntactic behavior is determined by these properties, insofar as its syntactic behavior can be attributed to argument structure as defined.

With reference to the verbs of (1), our proposals are as follows, starting with the unergative type exemplified by *sneeze*. First, we assume that this, and other verbs of its type, involve a process of “conflation,” involving a bare nominal root and a phonologically empty verb—we assume the process is a morphophonologically motivated concomitant of Merge. The nominal is the complement of the verb. The process of conflation (a restrictive variant Head Movement, adjoining the nominal to the verbal head) fuses the two items into a single word—its effects are visible at Phonological Form (PF) only, not at Logical Form (LF). At conflation, the verb is no longer “empty”, as it shares the overt phonological matrix of the noun. This is our theory of denominal verb formation—and correspondingly of deadjectival (e.g., *clear*) and deverbal (e.g., transitive *grow*) verb formation as well, since these too involve the the same fusion of a head with that of its complement.

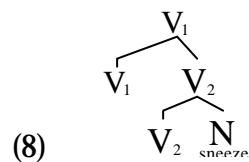
Abstracting away from the conflation process itself, the argument structure of

*sneeze* of (1a) is as follows:



The essential property of the verbal head here is that it projects a structure which contains a complement, its sister, but it projects no specifier. This is characteristic of unergative verbs in general. They project no specifier. Their sentential syntactic subjects are *external* arguments and, thus, excluded from the argument structure configuration itself.

It is to this essential property that we trace the inability of unergative verbs to enter into the transitivity alternation, an inability exemplified in this case by (2) and by countless other cases, such as *\*the clown laughed the child*, *\*the medicine slept the patient*, and so on. The explanation depends upon another assumption, namely that transitivity involves embedding a verbal projection as the complement of another verb, a free and unavoidable possibility within a system which recognizes the head-complement relation. Transitivity will be successful, or not, depending upon the nature of the embedded verbal projection. Consider (8) below, a result of the Merge process, defining a structure in which (7) appears as the complement of  $V_1$ :

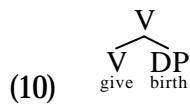


Conflation would fuse  $V_2$  and its nominal complement *sneeze*, and this derived verb would then conflate with  $V_1$ , giving a putative transitive verb *sneeze*, as in (2). But this is not a successful transitivity—transitive *sneeze* cannot result from this, since there is no position in (8) for a sentential syntactic object, i.e., no place for *the colt*, in this case. This is the desired result, because transitive *sneeze*, in this use, does not exist.

Many explicitly transitive verbs also share this property. Consider, for example, the verb *give* in (9):

(9) The cow gave birth.

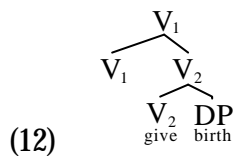
Abstractly, this verb projects the same V+complement structure as does the empty verb of (7):



It is the result of Merge alone. The verb of (1a), on the other hand, represents the “synthetic” type, so-called because it is the result of both Merge and concomitant conflation. The synthetic and analytic forms share the property that the head projects no specifier and, as a consequence, neither can undergo transitivity in our sense. Thus, just as (2) is ungrammatical, so also (11) is ungrammatical:

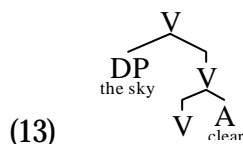
(11) \*An injection gave the cow birth early.

If this has an interpretation, it is not the simple causative of (9), i.e., it is not “an injection brought it about that the cow gave birth early.” The insertion of (10) in the complement position of a matrix empty verb leads to the same transitivity failure as that noted for (8) above:



This is an abstract representation of the relations defined by Merge; the surface form would have  $V_1$  and  $V_2$  conflated, of course. Since the subject of  $V_2$ , i.e., *the cow*, is an external argument, it will not appear as a specifier in the lexical argument structure of that verb, by hypothesis. It will therefore not be possible for it to function as the sentential syntactic object of the derived verb. Whatever the fate of (12), it will not give rise to the putative transitive \**give the cow birth*. The DP *the cow* simply cannot appear in the object position of *give*. And this is accounted for under the assumption that the verb which heads the complement—i.e., *give*—does not project a specifier, just as the empty verb of (7) does not.

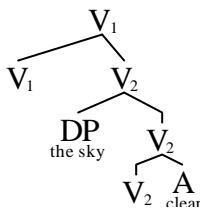
The behavior just noted contrasts with that of the deadjectival verb *clear*, the relevant syntactic behavior of which is illustrated in (1b) and (3). We assume that the intransitive variant of *clear* is identified with the following structure:



Again, this is an abstraction, indicating only the relations defined by Merge, not the conflation which gives rise to the actual deadjectival verb *clear*. The property we are interested in is this: the head  $V$  together with its complement  $A$  (*clear*) force the

projection of a specifier (*the sky* in (13)). This is a consistent characteristic of deadjectival verbs, which are classic "unaccusatives" (cf., Levin and Rappaport Hovav, 1995, for these and their opposites, the "unergatives"), and it is this property which permits transitivity. If (13) appears as the complement of a higher verb, the latter will locally c-command the specifier *the sky*. This specifier is thus in the position required for it to function, without further ado, as the sentential syntactic object of the derived verb—i.e., of the verb *clear*, arising through conflation first with V<sub>2</sub> and finally with the higher verb, V<sub>1</sub>:

(14)

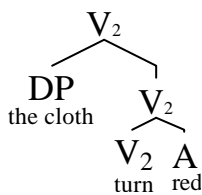


Deadjectival verbs like *clear*, *narrow*, *thin*, *red*, and the like, are synthetic representatives of their argument structure type. Analytic representatives abound, of course:

- (15) (a) The cloth turned red.  
 (b) The lake froze solid.  
 (c) The safe blew open.

These have precisely the same dyadic structure as their synthetic counterparts:

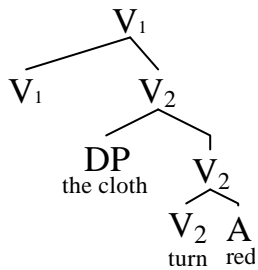
(16)



And like their synthetic counterparts, they participate in the transitivity alternation, unavoidably, so to speak, since Merge applies freely and the specifier projected by these verbs presents a DP in the required position, shown in (18), corresponding to (17a), abstracting away from conflation (of V<sub>2</sub> with V<sub>1</sub>):

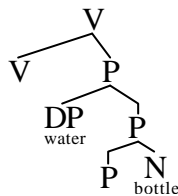
- (17) (a) The ochre turned the cloth red.  
 (b) The arctic air froze the lake solid.  
 (c) The charge blew the safe open.

(18)



Finally, let us consider the argument structure configuration associated with *bottle* in (1c):

(19)



The actual surface form related to this structure, of course, is defined by conflation of the noun *bottle* with its sister, P, an empty (phonologically null) preposition, and subsequent conflation of the P thus derived with the governing V, also empty. The complement of this verb is a P-projection which, by the very nature of that category, contains both a complement (*bottle*) and a specifier (DP, *water*). The latter is in the position required for it to function as the sentential syntactic object of the derived verb *bottle*, resulting from conflation. Denominal location and locatum verbs—like *bottle* and *saddle*, respectively—are synthetic. Analytic counterparts include *put* (*water in bottles*), *fit* (*the horse with a saddle*), and so on.

The necessary transitivity of denominal location and locatum verbs (cf., (4) above) follows from their argument structure. Unaccusative verbs alternate because both the inner head and the outer head are verbs—the intransitive is simply the inner projection unmerged with another verb. Location and locatum verbs, by contrast, are built upon a prepositional projection, by hypothesis. That is to say, the inner head is a preposition, not a verb; in the absence of the outer verbal structure, we are left not with an intransitive verbal projection but with a prepositional phrase.

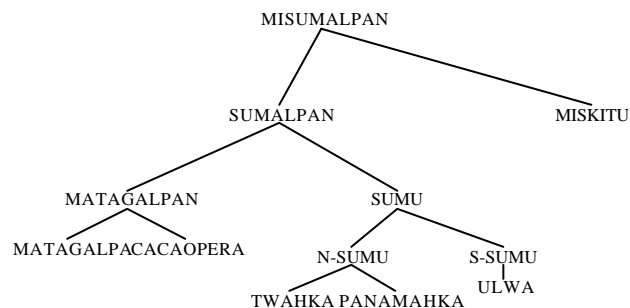
## 2. The Misumalpan languages.

The Misumalpan languages of Nicaragua and Honduras form a small and well-defined family whose name, devised by Mason (1939, 1940), incorporates the initial syllables from the names of three of its members, i.e., Miskitu, Sumu, and Matagalpa. The unity of the family was established by the extraordinarily prolific Lehmann (1920),

who also assembled in his work most of the Misumalpan linguistic data available in his time. To our knowledge, the first serious comparative work seeking to reconstruct aspects of the putative proto-language is that of Constenla Umaña (late 80s, n.d.).

Misumalpan predominates among the indigenous languages remaining in present-day Nicaragua, the only other living indigenous Nicaraguan language being Rama, of Chibchan affiliation, with approximately two dozen speakers remaining (Craig, 1985). Misumalpan is comparatively widespread in the region, with representatives both in Nicaragua and in Honduras. Nevertheless, it is a small family. The languages still spoken go under the names Miskitu and Sumu, the former having by far the most speakers, with estimates ranging from 70,000 to 90,000, of whom some 17,000 are in Honduras (cf. CIDCA, 1985). Miskitu is clearly the indigenous *lingua franca* of the Autonomous Atlantic Regions of Nicaragua. Sumu, has a much smaller number of speakers, by comparison, though it is still strong in some areas. It is said to have between 6,000 and 8,000 speakers, some 2,000 of whom live in Honduras (cf. Constenla Umaña, n.d.). But these Sumu figures just given represent the estimate for what we will refer to as Northern Sumu (cf. Heath, 1950). Southern Sumu, or Ulwa, which we take to be a separate though closely related language, is confined today to the town of Karawala, near the mouth of the Río Grande de Matagalpa. The population of Karawala is approximately 935, and the majority is ethnically Ulwa (Green and Hale, 1998). Linguistically, however, the town is effectively Miskitu, although 350 people are still able to speak Ulwa.

The western branch of Misumalpan, called Matagalpan following Brinton (1895), comprises the extinct Matagalpa and Cacaopera. These are closely and obviously related, and they were recognized as such by Brinton, who was appropriately cautious in his assessment of linguistic relationships. We believe that this entity forms a subfamily with Sumu (in agreement with Lehmann's intuition in this regard), and we refer to that grouping as Sumalpan. And we believe that this entity excludes Miskitu, an isolate within the larger Misumalpan family. Our assumptions concerning the relationships within the family as a whole are embodied in the following diagram:



The Northern and Southern branches of Sumu, like the two forms of Matagalpan, are very closely related. However, there are certain systematic morphosyntactic



differences between them whose cumulative effect is substantial enough to impede easy mutual intelligibility. A learning period of some months would be required in order for a Northern Sumu speaker to acquire a reasonable command of Southern Sumu. The reverse is true as well, though many Southern Sumu speakers are incidentally also speakers of some variety of Northern Sumu. In addition to the *systematic* differences between the two branches of Sumu, there are also *random* lexical differences. Of a sample of a hundred basic vocabulary items, Northern and Southern Sumu share between 61 and 71 percent, depending on whether judgments of cognation are, respectively, conservative or liberal (Hale and Lacayo, 1988; but see Constenla, n.d., for a higher estimate). In any event, we are inclined to say that Ulwa and its northern relatives are different languages, though closely related. By contrast, the division indicated within Northern Sumu is of quite a different nature. Twahka and Panamahka are clearly sister dialects of a single language, a fact which was recognized by the first travelers who took an interest in such matters, not to mention sophisticated investigators like Lehmann (1920) and Conzemius (1929).

Internal relations within the Misumalpan family are reasonably secure, though the precise nature of the genetic relation of Miskitu to Sumu is still a matter of investigation, as it is obscured somewhat by the existence in Miskitu of a large body of (Northern) Sumu loans, many of an intimate nature; and substantial back-borrowing from Miskitu into Sumu in the modern period also clouds the picture, though to a lesser extent. Furthermore, the syntactic structures of the present-day Misumalpan languages exhibit the characteristics of grammatical “merger”, not uncommon in well defined “linguistic areas” (cf. Campbell, *et al.*, 1986) and, particularly, in regions of extensive bilingualism. This circumstance renders syntax of little use here in the effort to establish a Miskitu-Sumu genetic connection. Nonetheless, once the effects of relatively recent historical processes are identified and set aside, deeply seated aspects of Miskitu morphology can be brought forth in support of the linguistic family posited by Lehmann and his successors.

Although Misumalpan is in geographic proximity to two Chibchan languages, Paya (Pech) to the north and Rama to the south, it is not obviously related to them. Chibchan is, however, the external connection generally accepted for the Misumalpan languages, which are held to belong to a larger linguistic entity termed Macro-Chibchan by Mason (1939)—see also Holt (1975) and Campbell (1979) for discussion and references. If Misumalpan is in fact related genetically to Chibchan, the relation may be too distant to establish. Certainly, it cannot be established on the basis of shared lexicon, in our opinion, and the evidence from morphology is weak as well (see Craig and Hale, 1992, for a study of one putative morphological etymology).

For many years, the modern Misumalpan languages have been spoken in a situation of intense bilingualism, or even multilingualism. While there are monolingual speakers of Misumalpan, to be sure, there are large areas in Eastern

Nicaragua where no one who speaks a Misumalpan language is monolingual. Of course, it is not surprising to learn that many, perhaps most, speakers of Miskitu, say, also speak either Spanish or English, the two Indo-European languages of the Atlantic Coast. But what is especially relevant here is that many, perhaps most, people who speak Sumu (Northern *or* Southern) also speak Miskitu, another Misumalpan language. As Norwood (1993) has pointed out, a person's position in the Eastern Nicaraguan ethno-economic hierarchy determines the number of languages he or she speaks—the farther down you are in the hierarchy, the more languages you speak; in general, people learn the languages which are higher in the hierarchy, not those that are lower. Thus, people whose first language is Sumu tend to know more languages than other people do, and their first “second” language is normally Miskitu.

While the observed linguistic capabilities of members of most Sumu communities can be understood in terms of the social and economic circumstances on the Atlantic Coast of today, as just suggested, it is evident to us that Sumu-Miskitu bilingualism itself is a matter of considerable historical depth and complexity. Most importantly for our purposes here, long-term bilingualism is part and parcel of a linguistic development which has resulted in a degree of structural isomorphism which permits us to say, setting certain details aside, that the three modern Misumalpan languages “share the same grammar”.

Consider the following simple sentence (from Hale, 1994)—the three lines are respectively Miskitu, Northern Sumu, and Ulwa:

- (20)
- |        |         |       |      |     |           |
|--------|---------|-------|------|-----|-----------|
| Witin  | raks    | wal   | sula | kum | îk-an.    |
| Witing | arakbus | kau   | sana | as  | î-na.     |
| Alas   | arakbus | karak | sana | as  | î-da.     |
| he     | gun     | with  | deer | one | kill-PAST |
- ‘He killed a deer with the gun.’

The Misumalpan sentences exemplify a number of things immediately, including the general head-final phrase structure of the languages—the verb is final in the clause, the instrumental phrase is P-final, as expected, and the indefinite determiner *kum/as* is final in the DP. The definite determiner is also phrase-final, as illustrated in (21) below, an example which presents an apparent exception to the general head-final character of Misumalpan phrase structure, i.e., in the post-nominal placement of attributive adjectival modifiers:

- (21)
- |      |       |      |              |
|------|-------|------|--------------|
| Sula | tara  | ba   | ai-kaik-an.  |
| Sana | nuhni | kidi | yâ-tal-na.   |
| Sana | sikka | ya   | yâ-tal-da.   |
| deer | big   | the  | me-see-PAST3 |
- ‘The big deer saw me.’

It has been shown, however, that this is not exceptional within the head-final grammar of Misumalpan. The N+A structure exemplified in (21) is a reduced relative clause and the adjective is in its expected clause-final position, i.e., predicate position (Green 1992, on Miskitu, though the analysis extends to the Sumu languages as well). In fact, this modificational structure is supremely consistent with the general principles of phrase structure in the family, inasmuch as it follows straightforwardly from the structure of the relative clause. The Misumalpan relative clause is “internally headed”, like that of Lakhota (Williamson 1987) or Navajo (Platero 1974, 1982). In surface form, the relative is simply a clause functioning as the complement of the definite determiner, as can be seen in (22) below:

- (22)        [[Yang sula kum kaik-ri]        ba]        plap-an.  
               [[Yang sana as tal-na-yang] kidi]    îra-na.  
               [[Yang sana as tal-ikda]        ya]        îr-ida.  
               I        deer one see-PAST1 the run-PAST3  
               ‘The deer which I saw ran (away).’

The relative NP argument, i.e., *the deer* in this example, is *internal* to the clause. This is the only *overt* representative of the semantic “head”. It appears in the position which the argument would occupy within the clause under ordinary circumstances, in object position in the case at hand. Thus, since adjectives function as predicates, their final position in N+A modificational constructions follows from the analysis according to which these are relative clauses.

While these examples serve to illustrate certain shared structures of the family, it is the extent to which the structures *match* which has held our attention for some time. In the case of the Sumu languages, this is perhaps expected, being due no doubt to their close relationship. In the case of Miskitu, however, it must be explained in other terms. Although Miskitu and the Sumu languages are probably related, at something like the “family” or “stock” level, the relationship is not a particularly close one. One cannot simply look at lists of vocabulary items to decide the nature of the relationship—far too much borrowing has gone on. Even such normally reliable items as the pronouns are of no use here, as the entire set of Miskitu personal pronouns has almost certainly been borrowed from Sumu. We can even be relatively sure that Northern Sumu, as opposed to Southern Sumu, was the source of the pronouns—and of the bulk the other Sumu-derived items in modern Miskitu. The situation is further complicated by the fact that modern Miskitu is now the source of hundreds of borrowings into Northern Sumu, including items which were originally Sumu to begin with. When all of the borrowed items are removed from consideration, what remains is a form of Miskitu which is quite different from Sumu. Very little vocabulary remains in common, and

the evidence for a genetic relationship between the two is found almost exclusively in shared morphology. The evidence includes the construct state and possessive morphology in the nominal system (found not only in Sumu and Miskitu, but in Matagalpan as well) and a number of rather specific details of verbal derivation. The evidence is certainly strong enough to support a genetic relationship, but it is not a close relationship, we repeat.

In view of the foregoing, we feel compelled to attribute much of the structural isomorphism within contemporary Misumalpan, as represented by Miskitu and Sumu, to contact and intensive bilingualism over a long period. To attribute all of it to common ancestry would severely strain credulity, in our judgment.

The parallels which are revealed by the examples we have seen so far are primarily in the realm of phrase structure—phrases are consistently head-final in the family as a whole; and all of the languages employ the internally headed relative clause, though all have an externally-headed alternative as well. The examples also exemplify the fact that all members of the family have subject agreement expressed morphologically in association with the clause-final inflectional apparatus which also marks tense; and all three languages have object agreement realized prefixally on the verb.

Modern Misumalpan structural isomorphism extends to two grammatical subsystems which have assumed particularly important roles in the languages, to an extent which encourages us to say that they are now “hallmarks” of the family. They are not unheard of elsewhere, of course, but their presence within Misumalpan is especially prominent and pervasive. One of these grammatical features has been mentioned in passing—it is the so-called construct state (Heath, 1927; listed systematically in Marx and Heath, 1961). This is the form which a noun assumes under specific grammatical conditions, one of which is illustrated in the following Misumalpan nominal construction:

(23)        naha    waitni-ka  
              âdika   al-ni  
              âka     al-ka  
              this     man-CNSTR

In general, when a noun is preceded by another element within a larger nominal construction which it heads, the noun appears in the construct—as here, where the noun is preceded by a demonstrative. The construct is also used in the possessive construction, in the right-headed relative clause construction, and autonomously (i.e., without prenominal accompaniment) where the nominal is referentially dependent on prior discourse. The grammatical principles governing the use of the

construct are identical in the three languages.

The second prominent feature in Misumalpan is the extensive use of clause sequencing constructions involving the system of subject obviation commonly known by the term switch-reference (cf. Jacobsen 1967; Finer 1985a,b). Misumalpan is not alone in the Americas in its use of switch-reference morphology, of course, but switch-reference is nevertheless a notable and extraordinarily important feature of the family, being used there in simple clause chaining (cf. Longacker 1985; Craig and Hale, 1992), in one kind of complementation (cf. Kang 1987; Hale, 1991), in the serial verb construction (cf. Hale 1991, 1992; Salamanca, 1988), and in the causative (cf. Avilés *et al.* 1988; Hale, 1989; Li 1991). While there are morphological differences among the Misumalpan languages, the grammar and use of switch-reference is the same in all. The following sentences illustrate clause chaining:

(24) Waitna ba      plap-i kauhwan.  
Al      kidi    k-îr-i      buk-na.  
Al      ya      îr-i      wauhd-ida.  
man    the    run-PROX    fall-PAST3  
'The man ran and fell.'

(25) Yang    waitna ba    kaik-ri      kauhwan.  
Yang    al      kidi    tal-ing      buk-na.  
Yang    al      ya      tal-ingwauhd-ida.  
I      man    the    see-OBV1    fall-PAST3  
'I saw the man and he fell.'

The head-final character of Misumalpan is reflected here not only in the verb-final order internal to the individual clauses but also in the relative ordering of the dependent and matrix inflectional morphologies and, consequently, of the clauses themselves—these latter are related structurally in approximately the manner in which a conditional is related to a main clause, with the inflection of the second commanding that of the first (as in the corresponding structure in West Greenlandic Inuit, Bittner 1994). The inflections glossed PROX(imate) and OBV(iative) are morphological portmanteaus representing *tense* and *obviation*. They are dependent in that both of the grammatical categories they realize are interpreted (partly or wholly, depending on the particular form) in relation to the inflection of the matrix verb. The tense of the dependent verb is bound to that of the matrix. And the obviation (or switch-reference) category, which determines in part the referential possibilities of the subject, is likewise interpreted in relation to the matrix clause. The subject of the PROX clause is necessarily coreferential with the subject of the matrix, while the subject of the OBV clause is necessarily distinct from that of the matrix.

These observations are expected and quite ordinary for a switch-reference

system, given the typological position and general typological consistency of Misumalpan. But the use of the switch-reference construction in expressing the causative gives rise to a circumstance which is far from ordinary. An example of the causative is given in (26), whose surface form is essentially identical to that of (25), a typical obviative clause-chaining construction. The arrangement of clauses expresses an *iconic* feature, commonly observed in clause sequencing constructions cross-linguistically, according to which the “cause” precedes the “effect”. But this fact, together with the typologically expected ordering of the dependent clause before the matrix clause results in a causative construction which is strikingly different from the causative as it is known elsewhere. In complete reversal of the usual situation, the Misumalpan languages have the “cause” predicate morphologically and syntactically *subordinate* to the “effect” predicate:

- (26)      Yang    waitna      ba    yab-ri      kauhw-an.  
           Yang    al            kidi   yamt-ing    buk-na.  
           Yang    al            ya    ât-ing wauhd-ida.  
           I        man        the    cause-OBV1 fall-PAST3  
           ‘I made the man fall.’

It is as if one said, in Misumalpan, “when I did (something to) the man, he fell”. And if this were all there was to the matter, there would be nothing much to say about it—it would simply be the case that Misumalpan does not really *use* the canonical causative construction to express these ideas. But that is *not* all there is to it. For certain syntactic parameters (e.g., control and the imperative), it is possible to show that in (26), but not in (25), the subject of the *first* clause is the subject of the construction as a whole, as expected in a *conventional* causative construction. So far, this remains a true contradiction, and its proper documentation, and analysis, is of some interest theoretically.

Turning now to argument structure and the lexicon, we will be referring to two Misumalpan dictionaries—actually, these are dictionaries in the making, and as such, unpublished. One of these is the Ulwa dictionary, now in its third version, cited as CODIUL/UYUTMUBAL 1998 in the references below, after the Spanish and Ulwa acronyms for the Ulwa Language Committee, whose members compiled the first two versions of the dictionary under the direction of Ken Hale and the much expanded current version under the direction of Thomas Green. This represents the Sumu branch of the family.<sup>1</sup> The second is the CIDCA Miskitu Dictionary, cited in the references as

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<sup>1</sup>We choose Southern Sumu (Ulwa) for this discussion primarily because we have enough information on it to illustrate the lexical principles of interest to us. We do not have that information for Northern Sumu (Mayangna), at least not in an appropriately organized format. We know, however, that Mayangna has essentially the same system as Ulwa (although the ta-Theme marker has spread to all pa-Themes and to some ø-Themes as well; see below).

CIDCA 1998, being compiled by Jorge Matamoros and Danilo Salamanca (CIDCA being the acronym for the Centro de Investigaciones y Documentación de la Costa Atlántica, established in three locations, Managua, Bluefields, and Puerto Cabezas (Bilwi)).<sup>2</sup>

### 3. The Misumalpan transitivity alternations: Ulwa (Southern Sumu).

Another pervasive feature of the Misumalpan languages is the existence of transitivity alternations marked by corresponding alternations in verbal morphology. Most verb themes in Ulwa—all but a handful, in fact—consist of a root and a thematic suffix. This suffix varies with transitivity, for verbs which participate in the standard "causative/inchoative alternation."<sup>3</sup> Essentially the same is true of Miskitu, as we will see, although that language possesses a very large number of verbs which lack any overt theme marker.

The sentences of (27) through (29) illustrate a common Ulwa transitivity alternation, in which the intransitive alternant is marked by the thematic suffix *-da* (glossed -DA) and the transitive alternant by *-pa* (glossed -PA):

(27) *Ulwa*:

- (a) Kuring abuk-d-ida.  
canoe capsize-DA-PST3  
'The canoe turned over.'
- (b) Kuring abuk-pa-h.  
canoe capsize-PA-IMPR2  
'Turn the canoe over!'

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<sup>2</sup>An early version of the Ulwa dictionary is on the internet at <http://members.tripod.com/~ulwa/index.html>, and the current version of the Miskitu dictionary is at <http://members.tripod.com/~ulwa.miskdict.html>.

<sup>3</sup>The term "causative" is used here merely to follow tradition. The alternation of interest here is a mere *transitivity* alternation and does not imply anything like the productive syntactic causative construction found in many languages. The derived transitives at issue here are constrained in the manner suggested earlier, i.e., as in (14) and the like, in which, by hypothesis, the lexically headed complement projects a specifier locally-commanded by the matrix, transitivizing, verb. By contrast, the sentential syntactic causative, like that involving the English verbs *have*, *cause*, *force* or *make*, for example, is not restricted in this way—thus, it permits a complement containing an external subject; while *\*laugh the child* is impossible in English, *make the child laugh* is, of course, perfect. The Misumalpan transitivity alternation is of the restricted type, the causative construction being utterly different (cf, Hale, 1989, 1991, 1992b).

- (28) *Ulwa*:
- (a) Kuring            batirh-da-rang (yataihdaram laih).  
canoe tip-DA-FUT3  
'The canoe will tip (if you lean sideways).'
- (b) Turum            ya    waya batirh-p-am (was ya utuhdangh).  
drum the    little tip-PA-OBV2  
'Tip the drum a little (and let the water pour out).'
- (29) *Ulwa*:
- (a) Wâlang            bas-ka            sang-da-i.  
savanna        foliage-CNSTR    green-DA-PRES3  
'The foliage of the savanna is greening up.'
- (b) Kahlu âka        sang-p-uting.  
shirt            this    green-PA-IMFUT1  
'I am going to make (dye) this shirt green (or blue).'

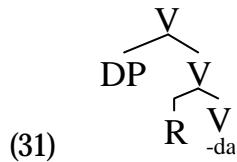
As mentioned, Ulwa verbs are typically bipartite in the sense illustrated by these examples. So, for example, the verb *sang-da* 'become green' (also 'become blue, alive') consists of a root element *sang-* and the intransitive verb formative, or thematic suffix, *-da-*. It is the latter, we must assume, that functions as the head of the lexical projection in which it appears. It is the "true verb," so to speak, like the non-overt verbal head postulated for the English deadjectival verb *clear* in (13) above. It is not surprising—and not an accident, presumably—that the root elements in some of the alternating *da*-themes of Ulwa also enter into the formation of adjectives in the language. The derivation of adjectives involves the use of the construct-state morphology, though with syntactic consequences very different from those seen in the syntax of nominals. The root is morphologically nominal, but it functions as a stative predicator in the derived form to which we have applied the term "adjective." The verbs of (27) through (29) are based on roots which participate in this adjectival use, as shown in (30), where *-ka* is the construct morphology:

- (30) *Ulwa*:
- (a) abuk-ka                    'overturned, capsized, face down'
- (b) batirh-ka                'leaning, tipped'
- (c) sang-ka                    'green, blue; alive'

We say that it is not surprising that roots of this type are involved in the formation of Ulwa alternating verbs, because this type quite generally and cross-linguistically has the lexical property that it must appear in a structural configuration which permits it to satisfy its "attributive," or "predicative" character, i.e., the fundamental and defining characteristic of adjectives. This requirement is satisfied in

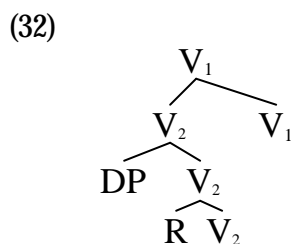


the argument structure configuration assumed for the intransitive verbs of (27) through (29):<sup>4</sup>



We take the head of the projection to be *-da*, claiming this to be the verbal nucleus. The root element, R, corresponding here to *abuk-*, *batirh-*, *sang-*, is perhaps of indeterminate or neutral category. But it has a lexical property of consequence—it has the lexical property that it must be in an appropriate structural position in relation to a nominal, to satisfy its attributive character. In (31), this requirement is satisfied by the projection of a DP in specifier position, as shown. We claim that the root element in these structures "forces" the head V (i.e., *-da*) to project a specifier. And it is this property which accounts for the transitivity alternation. The root elements force the appearance of a specifier. Verbs, in and of themselves do not project a specifier—verbs canonically take external, not internal, subjects.

It is the lexical projection of a specifier, of course, that accounts for the transitivity alternation, the intransitive alternant being that whose structure is depicted in (31). Like other syntactic "constructions," the transitive arises as the result of Merge, according to which any syntactic object—e.g., (31)—can appear as the complement of another head, say a verb, as  $V_1$  in (32):



As in the parallel English case (e.g., *clear*), so also in the case of these alternating verbs of Ulwa, this formation is successful as a transitive precisely because of DP, the specifier of  $V_2$ . This is appropriately situated in relation to  $V_1$ , its governor and potential case-assigner in sentential syntax. Moreover, this view of the matter correctly expresses the fact that the subject of the intransitive corresponds to the object of the transitive—in both cases, the argument functioning in these roles is the DP in the

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<sup>4</sup>The linear order shown here is arbitrary, head-final being chosen here solely in conformity with the general head-final character of the Misumalpan languages. At this level, it has no linguistic significance.

specifier position projected by  $V_2$ .

The structures (31) and (32) are abstractions, representing just the syntactic relations involved, not the morphology. Conflation applies to these structures, of course, resulting in the observed affixation of verbal nuclei to root elements. In (31), the verbal head is realized as the suffix *-da*. In (32), however, the conflation process is more complex. In accordance with the strict sisterhood principle of conflation, the root *R* conflates first with  $V_2$ , the resulting complex conflates with  $V_1$ , and the verbal heads are realized as the single suffix *-pa*.

The following is a sample listing of Ulwa *da*-theme verbs alternating with *pa*-theme transitives. The verbs are given in the infinitive (as in the dictionary), with the intransitive theme-marker in square brackets [ ]; the corresponding transitive infinitive is obtained by deleting [da]; the transitive theme marker *-pa* drops out in the infinitive, thus intransitive *abukdanaka*, transitive *abuknaka*. listed here as *abuk[da]naka*

- (33) *Ulwa alternating da-theme verbs, with corresponding pa-theme transitives:*  
abuk[da]naka (capsize, turn face down); alh[da]naka (develop a hole; perforate);  
asah[da]naka (spread legs; hold astraddle); asal[da]naka (be embarrassed;  
embarrass, shame); baras[da]naka (blacken, darken); batirh[da]naka (tip, lean);  
birh[da]naka (tear, rip, shred); birik[da]naka (cover self; cover); dara[da]naka  
(spread—of plant growing; spread out evenly—e.g., rice for drying);  
didiu[da]naka (stretch, extend); dim[da]naka (extend to full length); dut[da]naka  
(come out; extract, pull out—as tooth, uproot—as plant); isik[da]naka (shudder,  
shake, wobble; shake, make shudder); kara[da]naka (melt); king[da]naka  
(become clogged; plug up); kubit[da]naka (bend at joint); kuru[da]naka (become  
unstitched; unstitch); luhus[da]naka (froth, lather, become foamy; lather, make  
foam); rî[da]naka (unfurl, unfold—as sail); sang[da]naka (become green; make  
green); sayak[da]naka (dislocate—as knee, joint); suih[da]naka (break off—as  
limb); tah[da]naka (drip, dribble—as water, medicine); tak[da]naka (peel—as  
skin, paint); tarak[da]naka (tangle—as fish line, vines); tulu[da]naka (revolve,  
turn; make turn, revolve); turu[da]naka (flake off—as skin, shell, husk);  
uluh[da]naka (come loose, come untied; untie, let loose); utuh[da]naka (spill—  
liquid); warin[da]naka (bend crooked); wiri[da]naka (swivel, turn around, twist);  
wirih[da]naka (mix—as medicines); wiring[da]naka (inflate, bloat—as stomach);  
yaih[da]naka (approach, come near; bring near, place near); yûh[da]naka  
(become long, tall—as person; lengthen, heighten—building); yurah[da]naka  
(open—of mouth).

Given that the verbs of (33) all participate in the transitivity alternation, we assume that they have the relevant properties attributed to the verbs of (27) through (29). Accordingly, their intransitive alternant is of the form shown in (31), and their

transitive alternant takes the form shown in (32). The key to this is the circumstance that, in each case, the root element (R) has the lexical property of forcing the verbal head to project a specifier, internal to the lexical projection, which functions ultimately as sentential syntactic subject (of the intransitive) or object (of the transitive). While this is a fundamental characteristic of adjectives, given their attributive and predicative functions, the root elements in the verbs of (33) are not always attested independently in an adjectival use. Many are (*sangka* 'green, blue, alive'; *yûhka* 'long, tall'; *baraska* 'black'; *asalka* 'embarrassed'; etc.), but many are not. We do not know at this point in which cases the missing use is principled and in which cases it is simply a gap in the record. In fact, this illustrates one of the reasons why the sort of theoretical speculation we are engaging in here is appropriate even at this relatively adolescent stage of dictionary making. In this instance, our theoretical speculations tell us that we must, at some point, determine for every verb the full range of lexical projections in which the root (R) may appear. For example, we must know whether the root element in all of the verbs of (33) appear independently in the adjectival form and partake of the corresponding adjectival syntax? If not, why not? This sort of question crops up constantly when a particular theoretical perspective is consistently applied, even if that perspective proves ultimately to be in error in some respects—as most theories do, that being the engine which drives the field forward. The dictionary must, it seems to us, be a resource which, to the extent possible, purports to answer questions of this nature. We will return to this topic at a later point.

The verbs of (33) share the semantics which is traditionally referred to as "change of state," and this is consistent with the fact that they are alternating verbs. Given the generality of the grammatical and lexical principles involved here, it is not surprising, therefore, that many of these Ulwa verbs translate into English as verbs which are alternating verbs in that language as well (e.g., *lengthen*, *blacken*, *tip*, *break*, *tear*, *capsize*, *extend*, *clog*, *bend*, *peel*, and so on). In both languages, the root elements share the property of forcing the verb to project a specifier, the sine qua non of the simple "causative/inchoative" transitivity alternation at issue here. And we expect the principles observed in Ulwa to be replicated to a degree in the other Misumalpan languages.

The da-theme alternating verbs of Ulwa are not always paired with pa-theme transitives. Some are paired with members of the large ta-theme class instead, as in the sentences of (34), illustrating uses of intransitive *nû-da-* and corresponding transitive *nû-ta-* 'hide':

(34) *Ulwa*:

- (a) Yang bikiska      balna kaupak      nû-da-ring.  
 I children PL from hide-DA-FUT1  
 'I will hide (myself) from the children.'

- (b) Yang lih-ki-wan                      man kaupak                      nû-ta-ring.<sup>5</sup>  
 I            money-CNSTR1            you    from                      hide-TA-FUT1  
 'I will hide my money from the you.'

While *ta*-theme verbs, both transitive and intransitive, are extraordinarily abundant in Ulwa (and in Northern Sumu as well, where *-ta* has supplanted *-pa* altogether), the favored transitive counterpart of Ulwa intransitive *da*-theme verbs is evidently the *pa*-theme, themes in *-ta* being relatively less frequent in this usage. Some of the latter are listed in (35)—here again, the verbs are given in the infinitive with *-da* in brackets (like *-pa*, the *-ta* thematic element deletes in the infinitive, hence *nûdanaka* 'to hide (intr.)', *nûnaka* 'to hide (tr.)', jointly *nû[da]naka*):

- (35) *Ulwa alternating da-theme verbs, with corresponding ta-theme transitives:*  
 dak[da]naka (snap, break; cut, chop off—as rope, limb); mî[da]naka (stay, dwell; stop, detain); muh[da]naka (wake up); nû[da]naka (hide; secrete, conceal, and in a related sense, steal, purloin); pat[da]naka (pop, burst; puncture—as blister); pil[da]naka (chip—as plate); pui[da]naka (cool—as food); pusing[da]naka (swell—as lip, hand); tap[da]naka (fall down; lower—as trousers); tulup[da]naka (peel off whole or in large pieces—as skin); yam[da]naka (become—as rich, a better person, a doctor, etc; make, create).

In relation to their essential grammatical properties, these verbs belong to the same category as the verbs of (33). They project the same configurational structures—namely, (31) for the intransitive, (32) for the transitive. A question which we will not attempt to answer at this point is whether the choice of *-pa* or *-ta* in the transitive is something significant and regular, as opposed to an "archaic residue" and a mere matter of "spelling" in the synchronic grammar of Ulwa. This is another among many matters that remain to be dealt with properly. In any event, we will assume for present purposes that the verbs of (35) are not fundamentally different from those of (33).

Not all Ulwa labile verbs have intransitive themes based on *-da*. Another prominent intransitive verbal nucleus, defining a significant number of Ulwa intransitive themes, is *-wa* (glossed *-WA*). This element is of some historical interest for Misumalpan, given that it has an apparent cognate in Miskitu, as we will see in due course. It is exemplified in (36) by the verb *ala-wa*- 'grow', paired with the transitive *ta*-theme *ala-ta*- 'grow, raise':

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<sup>5</sup>Construct morphology (e.g., possessive *-ki* 1, *-ma* 2, *-ka* 3 and *-ka* plain CNSTR, etc.) is suffixed not to the word but to the first metric foot—hence *lih-ki-wan* 'my money', not \**lihwan-ki*.

- (36) *Ulwa*:
- (a) Baka-ki                      itukwâna      ala-w-ida.  
 child-CNSTR1      large                      grow-WA-PST3  
 'My child has grown large.'
- (b) Alas baka-ka                      yam-ka                      ala-t-ang.  
 she child-CNSTR3                      good-CNSTR                      grow-TA-RPST3  
 'She raised her child well.'

Other verbs of this category are the following (listed in the infinitive, in the now familiar manner):

- (37) *Ulwa alternating wa-theme verbs, with corresponding ta-theme transitives*:  
 ala[wa]naka (grow; raise—as child, plant); â[wa]naka (enter, go in: insert, put in);  
 bah[wa]naka (break); dâ[wa]naka (burn); dis[wa]naka (go out; extinguish, put  
 out—as fire); il[wa]naka (go up, ascend; raise, hoist); î[wa]naka (die; kill);  
 kah[wa]naka (smear self, anoint self; smear, anoint, paint); lah[wa]naka (boil,  
 cook); lak[wa]naka (lower, descend, go down; lower, let down, put down);  
 lâ[wa]naka (pass, go across; move, transfer); mah[wa]naka (become sated, full;  
 fill—as food fills stomach); pura[wa]naka (get wet; wet); râ[wa]naka (be in the  
 sun to dry; put in the sun, spread in the sun—as seeds to dry); sah[wa]naka  
 (split—as wood); sing[wa]naka (heal, get well; heal, cure).

A small number of wa-theme verbs are paired with pa-theme transitives; these are generally verbs of putting and stance:

- (38) *Ulwa alternating wa-theme verbs, with corresponding pa-theme transitives*  
 balah[wa]naka (put on self, don—as hat; put on—as hat); kut[wa]naka (lie down;  
 lay down); lau[wa]naka (sit down; seat, put in sitting position); muk[wa]naka (lie  
 down; lay down); sak[wa]naka (stand up; put in standing position); sih[wa]naka  
 (move, change location; send).

*Ulwa* alternating verbs in *-wa* evidently project the same lexical syntactic structure as those in *-da*. The unifying feature of both types of verbal themes considered here is presumably to be found in the lexical character of the root (R). In both cases, the lexical requirement that the root element be appropriately positioned in relation to a nominal constituent (a "subject" of which it can be predicated) forces the head verb (V) to project a specifier, permitting transitivization, as in (32).

Part of the theoretical interest in labile, or alternating, verbs is in the *contrast* between these and another large class of verbs, namely the *non*-alternating verbs. As we have seen, many *Ulwa* intransitives in *-da* have transitive partners. But many do not. The verb *ai-da*- 'cry' does not alternate, for example:

- (39) Ai-da-yang (sûkilu îwida bahangh).  
 cry-DA-PRES1  
 'I am crying (because my dog died).'

This non-alternating behavior is not random among Ulwa da-theme verbs. The following verbs, we suspect, are correctly classified as non-alternating—that is to say, their lack of a transitive partner is almost certainly not a gap in the record but a true linguistic fact:

- (40) *Ulwa non-alternating da-theme intransitive verbs:*  
 ahdanaka (moan); aidanaka (cry); amatdanaka (grieve); âmhdanaka (yawn);  
 âudanaka (belch); baladanaka (rumble, make vibrating sound); bârhdanaka  
 (snore); bilamhdanaka (blink eyes); bisakdanaka (make smacking sound);  
 bîsdanaka (make a click or kissing sound); buihdanaka (twitch, have muscle  
 spasm); isamhdanaka (sneeze); isdanaka (play); nanadanaka (tremble);  
 pisitdanaka (do somersaults); pitukdanaka (kick, flail); rikdanaka (crawl—as of  
 baby); sutdanaka (jump); tikahdanaka (pontificate); tisdanaka (spark, sparkle,  
 crackle—as fire); tumhdanaka (swim); uhdanaka (cough); umitdanaka (dive);  
 urukdanaka/urupdanaka (breathe); wamhdanaka (travel); wapdanaka (growl);  
 wâtданaka (walk); yaradanaka (stagger, totter, reel); yuputdanaka (twitch, stir).

These are basically verbs of sound production, bodily movements, bodily responses, and manner of motion. They belong semantically to the category now generally referred to by the term "unergative," a fact that is immediately evident, for example, by comparing these meanings with David Perlmutter's excellent semantic classification, predating the term now current for verbs of this type (Perlmutter, 1978). Like these Ulwa verbs, their English translations also fail to alternate, as a rule, permitting only the intransitive use in sentential syntax. Thus, for example:

- (41) *Ulwa:*  
 (a) \*Baka ya ai-t-ikda.  
 child the cry-TA-PST1  
 \*I cried the child.  
 (Cf., 'I made the child cry.')
- (b) \*Aitak ya yâ âmh-t-ida.  
 book the me yawn-TA-PST3  
 \*The book yawned me.  
 (Cf., 'The book made me yawn.')

- (c) \*Sumaltingka ya bikiska balna is-ta-i.  
 teacher the children PL play-TA-PRES3  
 \*The teacher is playing the children.  
 (Cf., 'The teacher has the children playing.')

The intended ideas here are perfectly easy to express in Ulwa, using the productive causative construction (e.g., *baka ya âting aidida* 'I made the child cry.'). but they are not expressed using simple transitivity involving the structure depicted in (32). The same is true in English.

What is the reason for this? Given the striking meaning correlation between English and Ulwa, it is tempting to lay the entire business at the feet of semantics. And at some deep, as yet largely inaccessible, level of linguistic form this is quite probably where the matter resides. But at the level at which we are now able to operate, semantics is too unreliable, partly because we simply cannot say what the meanings of words are. Good reason for being cautious here comes from cross-linguistic considerations, ironically the very area which inspires optimism much of the time. In Hopi, the verbs which translate many of the unergatives of English and Ulwa do indeed participate in the very transitivity alternation we have been examining here (Jeanne and Hale, 1998). Given our limitations, we cannot simply say that the Hopi roots involved are semantically different from their English and Ulwa counterparts, any more than we can say that they are the same.

We are stuck then with what is observable, namely, the syntactic behavior—some verbs alternate, others do not. And we have an elementary framework within which this difference can be expressed in a manner which is straightforwardly consistent with general syntactic principles relating to such matters as the argument structure of predicators, (abstract) case assignment, grammatical and thematic relations, and agreement.

Assuming that we are correct in assigning the structures (31) and (32) to Ulwa alternating verbs, we can express the phenomenon of non-alternation in a simple and straight forward manner. The root elements (R) of non-alternating (i.e., unergative) verbs have the lexical property that they do not force the verbal head to project a specifier. Thus, the argument structures of the verbs of (40) have fundamentally the following form:

$$(41) \begin{array}{c} V \\ \diagup \quad \diagdown \\ R \quad V \\ \quad \quad \quad -da \end{array}$$

Affixation of *-da* to R is effected by conflation, as usual, respecting phonological requirements of the language. Transitivity is impossible, of course, since the

unergative structure lacks a specifier (and potential sentential syntactic object)—that being the defining characteristic of unergatives. The subject of an unergative, like that of a transitive (e.g., (32)), is an external argument, in keeping with the general default principle according to which a verb does not project a specifier unless its complement, by virtue of its lexical properties, forces it to do so.

We have given a partial account of the alternating and non-alternating verbs of Ulwa. We have not yet looked at the phenomenon of non-alternation from the standpoint of verbs in *-ta* and *-pa* (both transitive and intransitive non-alternating verbs are found with these thematic elements), nor have we studied members of the small but rather important class of  $\emptyset$ -theme verbs (*talnaka* 'see', *dahnaka* 'hear', *watnaka* 'seize', *wânaka* 'come', *yawanaka* 'go', *kasnaka* 'eat', *dînaka* 'drink', *kawaranaka* 'laugh', *wasaranaka* 'bathe', *îranaka* 'run', *înaka* 'get', *atnaka* 'be', *amanaka* 'sleep', *duihnaka* 'carry', *kuihnaka* 'achieve'), all non-alternating.<sup>6</sup> We set these matters aside for another occasion, and we turn now to a consideration of Miskitu transitivity alternations.

#### 4. The Misumalpan transitivity alternations: Miskitu.

If there is indeed a Misumalpan family that includes Miskitu, then the evidence for it is probably to be found in the domain under investigation here. For it is in this domain that deep-seated and systematic commonalities are found, in a form sufficiently altered in appearance to suggest an antiquity far exceeding that of the overwhelming and beguiling more recent sharings due to intensive contact and bilingualism.

Although it is difficult to establish regular phonological correspondences at the level which we suspect truly represents the common roots of Miskitu and the Sumu languages, we cannot help but be impressed by the fact that Miskitu transitivity alternations (with certain explicable exceptions noted in Salamanca, 1998) are consistently marked by the element *-w* in the intransitive member of the alternation, recalling Sumu intransitive themes in *-wa*, illustrated by (36), (37), and (38) for Ulwa. Miskitu lacks anything corresponding to the Sumu intransitive *-da*. Instead, *-w* (glossed *-W*) is the standard Miskitu intransitive formative in all alternating verbs, as exemplified in (42):

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<sup>6</sup>Tom Green (p.c.) suggests that the non-alternating verbs in *-ra* represent a class defined by an archaic thematic element. His evidence for this comes from the prosody of Ulwa verb roots, according to which each constitutes an iamb. If *-ra* were a part of the root in these cases, these verbs would be exceptions to this prevailing pattern.



(42) *Miskitu*:

(a) Windar        glas-ka                    ba        bai-w-an.  
window        glass-CNSTR the        break-W-PST3  
'The window glass broke.'

(b) Lapta ba        glas    bai-k-isa.  
heat the        glass break-K-PRES3  
'Heat breaks glass.'

These verbs represent the class of transitivity alternations in which the transitive member is marked by the thematic element *-k* (glossed *-K*). This is evidently felt by bilingual speakers to be the Miskitu equivalent of Sumu *-ta* (cf., Ulwa (35) and (37) above), hence such relatively recent comparisons as Sumu *sumal-ta*- 'teach' and Miskitu *smal-k*-, and Sumu *pih-ta*- 'whiten' and Miskitu *pih-k*-. Other verbs participating in this alternation are listed in (43), in the infinitive, and in the intransitive only, thus *baiwaia* abbreviates intransitive *baiwaia* and transitive *baikaia*.<sup>7</sup>

(43) *Miskitu intransitive w-themes, with transitive k-themes*

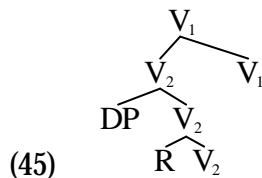
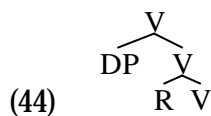
amaia (burn); âwaia (float; set afloat); banghwaia (fill—as with water); blakwaia (tangle, coil, roll up—as of thread, rope); bulwaia (twist); buswaia (get wet; wet); bûwaia (raise up, stand up); daiwaia (come out—as hair; pull out—as nail); daswaia (go out—as of fire; extinguish—as fire); dimaia (enter; insert); dîwaia (get erased; erase—as blackboard); ilingwaia (open—as book, sack, umbrella); îwaia (sit down, get lower; set, lower—as baby from bed); kakahwaia (get stuck; hook, snag); kâwaia (get toasted, lightly burned—as face in sun; toast, roast—as coffee beans); klakwaia (get cut; cut—as flesh); klaswaia (coagulate, thicken, solidify—as liquid); kriwaia (break—as stick); kwâwaia (open—as door, earth in quake); laiwaia (spill, pour—of liquid); lapaswaia (get squashed; squash); langhwaia (come undone, unstitched; loosen, unstitch); lâwaia (dry); lûwaia (cross to other side; take across); nuhwaia (get fat; fatten); palhwaia (extend—as of wing); pâwaia (grow; raise—as child); pyawaia (cook, boil); pihwaia (whiten, bleach—as clothes, hair); prâwaia (close—as door, eyes, road); raswaia (slither—as snake; drag on ground); râwaia (heal, wake up; heal, cure, waken); ratwaia (cook till soft); sirang îwaia (become frightened; frighten); slilwaia (melt); sruhmaia (bounce—as ball); swapaia (soften, get tired; soften, tire); tahwaia

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<sup>7</sup>Two phonological remarks should be made here: (i) when thematic *-k*- is added to a *k*-final root, degemination occurs, thus \**blakkaia* > *blakaia*; and certain roots ending in a peripheral nasal N (whose exact nature is not known, though it is probably /m/), the following takes place in interaction with the thematic elements: N+w > mm>m, N+k > ngk, as in *amaia*, *angkaia* 'burn', *dimaia*, *dingkaia* 'enter, insert'; but compare *sruhmaia*, *srumhkaia* 'bounce' (cf., Salamanca, 1998); *-w* deletes after root final /p/, as in intransitive *swapaia*, beside transitive *swapkaia*.

(drip—as water, medicine); *tīwaia* (get lost; lose); *tuhwaia* (burn, scorch); *ubulwaia* (get stirred up, agitated—as water; stir up, agitate); *yamalwaia* (release gas, air; fan, ventilate); *yukuwaia* (hide).

It is quite clear that the alternating verbs listed here represent the same resultative and change of state semantic categories as the corresponding alternating verbs of Ulwa and, accordingly, the same structures are assumed for them. Abstracting away from conflation, the structures are (44) for the intransitive, (45) for the transitive—the transitive structure being defined by the operation Merge applied to (44) and V (V<sub>1</sub> in (45)):



In the phonological representation of (44), R conflates with V and the latter is realized as the suffix *-w*. In (45), R conflates V<sub>2</sub> creating a verb form which is subsequently conflated with V<sub>1</sub>; the two verbal elements are realized as the single suffix *-k*. This accounts descriptively for the morphophonological distribution of these elements in alternating verbs—the intransitive member is marked by *-w*, the transitive by *-k*.

While the intransitive partner of alternating verb pairs is consistently marked by *-w*, the transitive is not necessarily marked by *-k*; many alternating transitives are marked by *-b*, a thematic element which we presume to be cognate with Ulwa *-pa* and, thus, part of the small body of relatively strong evidence supporting the generally accepted view that a Misumalpan family including Miskitu is real. The following sentences illustrate the *-w/-b* transitivity alternation:

(46) *Miskitu*:

(a) Dūs ba pāsa wal yah-w-isa.  
 tree the wind with shake-W-PRES3  
 ‘The tree is shaking in the wind.’

(b) Pāsa ba dūs târa nani-ra yah-b-isa.  
 wind the tree big PL-ACC shake-B-PRES3  
 ‘The wind is shaking the big trees.’

Other verbs conforming to this pattern are listed in (47), in the infinitive, as before, and listing the intransitive alone, so that *yahwaia* abbreviates the pair intransitive *yahwaia*, transitive *yahbaia*:

- (47) *Miskitu intransitive w-themes, with transitive b-themes:*  
*dakwaia* (break—as rope, string); *drâwaia* (stretch—as rubber); *drîwaia* (lean, incline, tilt—as tree in wind); *dringhwaia* (knock down, topple—as tower); *druwaia* (extend—as water, honey, thread); *dungwaia* (gather together, huddle—as chicks under hen's wings); *ilihwaia* (swarm, scatter—as ants, seeds); *kalhwaia* (dislodge—as riverbank, bone); *karhwaia* (move, rock—as waves rock boat); *kitwaia* (move, shift—as table, chair); *krukwaia* (become disjointed; loosen); *klikwaia* (click); *krunghwaia* (splash, slosh—as water); *lakatwaia* (fold over, double over); *lahwaia* (lower—as price, bucket into well); *lalalwaia* (slip, slide); *lingwaia* (resound; make resound); *liswaia* (split—as wood); *plinghwaia* (peel, flake, skin—as skin, husk, bark); *wilwaia* (turn—as propeller); *yahwaia* (shake—as tree in wind); *yakawaia* (scatter; toss out—as garbage).

Given their participation in the simple transitivity alternation, we assume that these verbs project the same structures as do the alternating w-themes of (43). Within the conception of argument structure with which we are working, the structures projected are (44) for the intransitive member, (45) for the transitives. Miskitu corresponds closely to Ulwa, clearly.

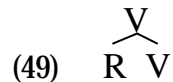
As in the case of Ulwa da-themes, so also for Miskitu w-themes, there are many which do not alternate, having only an intransitive use in sentential syntax. Some of these are listed in (48):

- (48) *Miskitu non-alternating w-theme intransitive verbs:*  
*atakwaia*, *atwaia* (limp—as lame person, horse); *atangwaia* (duck down); *birhwaia* (swing, hang—as monkey); *blahwaia* (quarrel—as heirs over land); *bubukwaia* (break out—as skin in sores); *byunghwaia* (emit sparks—as fire, short circuit); *dikwaia* (beat, pulsate—as heart); *irwaia* (dodge—as to avoid blow); *itikwaia* (crawl—as baby); *kilwaia* (fork, turn off—as road); *kratwaia* (snore); *lakwaia* (shine—as stars, newly shined shoes); *mutwaia* (squeeze in, squeeze through—as person in crowded space); *nawaia* (twist, warp—as wood with heat); *piswaia* (bubble—as water poured); *pitwaia* (pulsate—as arteries, heart); *puswaia* (wade, walk in water); *riswaia* (bristle—as when hair stands on end); *rutwaia* (breath noisily—as child with cold); *sarhwaia* (trot, jog—as horse, person); *srutwaia* (jump—as person, animal).<sup>8</sup>

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<sup>8</sup>Given that thematic -w is normally lost after root-final bilabials, the following are probably to be included here: *plapaia* (run); *wapaia* (walk); *yapaia* (sleep).

Since our focus here is on the aspects of argument structure which determine syntactic behavior, the behavior of these Miskitu verbs leads us to believe that they belong together in that they share the structural property that their verbal nucleus (i.e., *-w*) does not project a specifier. Presumably, therefore, their root components are of a type that does not require the projection of a specifier. Like their Ulwa counterparts in (40), these Miskitu verbs have the following simple structure:



It follows, then, that hypothetical transitives of the type exemplified in (50) are not possible (shown with *-k*, but *-b* would also be impossible):

(50) *Miskitu*:

- (a) \*Syahka        ba        ai        krat-k-isa.  
       catarrh        the        me        snore-K-PRES3  
       \*The cold snores me.  
       (Cf., 'The catarrh makes me snore.')

- (b) \*Aras-ki                    sarh-k-amna.  
       horse-CNSTR1        trot-K-FUT1  
       'I will trot my horse.'

The semantic categories represented in (48) include manner of motion, bodily movements and responses, and emissions (sparks, light). These are meanings associated with canonical unergative verbs. However, although they are consonant with our semantic expectations, semantics cannot be relied upon at this point to predict the behavior. The latter is itself more reliable. Thus, for example, at least two Miskitu verbs of sound production or sound emission (i.e., *klikwaia* 'click'; *lingwaia* 'resound') are alternating verbs (with b-theme transitives), though their English and Ulwa counterparts are non-alternating. Similarly, while Miskitu *sarhwaia* 'trot' cannot transitive in the manner shown, its English translation (and those of other manner of motions verbs as well) do have transitive partners—with special semantics, to be sure (thus, \**I jumped my horse when I slammed the door*, as compared to *I broke the mirror when I slammed the door*), and, in all probability, with a syntactic structure distinct from that of the alternating verbs we have been considering.

Unlike the Sumu languages, Miskitu has many non-alternating verbs (some intransitive, some transitive) which lack any overt thematic marker. Some representative examples are given in (51) and (52):

(51) *Miskitu intransitive ø-theme verbs:*

aisaia (speak); apaia (lack, fall short—as food); âpaia (lay eggs); balaia (come); kaia (be); inaia (cry); ipaia (blink—of eye); kikaia (laugh); klipaia (blink—as in sunlight); kwasaia (crawl—as baby); lamaia (die down—of wind); lipaia (shine, flash—as lightning); pâlaia (fly); plapaia (run); plupaia (flutter—as flame, flag); plimaia (zigzag); pristaia (do somersaults in play); snipaia (break, fracture—as bone); srimaia (become numb—of extremities); sripaia (go down—of swelling; deflate—as tire); takaia (exit); tamaia (butcher, cut up—as carcass); ulaia (climb, ascend, see transitive below); umaia (swarm—of insects); upaia (doze); waia (go); wapaia (walk); yapaia (sleep).

(52) *Miskitu transitive ø-theme verbs*

bapaia (put on—as hat; found—as organization; raise, hoist—as flag); bikaia (bury—as corpse, money); briaia (have, get); diaia (drink); kapaia (groped for—as under water; thresh—as rice); klamaia (squeeze—as to extract juice); (s)mamaia (weave—as hammock); mâyunaia (praise); munaia (do, cause); pamaia (hang); piaia (eat); sâbaia (stab, spear, shoot); sâkaia (get, extract, find); samaia (bite); sapaia (palpate—as doctor does to patient); sipaia (sew, caulk); sunaia (put in higher place—as load on horse; hoist—as flag); swiaia (leave, discontinue); taibaia (press, oppress, exploit); tumaia (envy—as another's possessions); ulaia (ride—as horse); wâlaia (hear); wiaia (say); winaia (call); wipaia (whip); yâbaia, yaia (give); yuwaia (distribute, share—as gifts).

While ø-theme verbs are more numerous in Miskitu than in Ulwa, their number is not particularly great. The number might even be smaller than is evident on the surface, in as much as some k-final, p-final, m-final, and w-final roots may derive from themes in *-k*, *-b*, or *-w* (cf., Salamanca, 1989); the implied phonological reductions are known to occur independently—labial assimilation and degemination; and final /k/ or /w/ could actually be the thematic element itself in some cases. Setting aside verbs that might be dismissed on these grounds, there remains a small set of what appear to be true ø-theme verbs, including vowel final themes (*brî-*, *dî-*, *pi-*, *swi-*, *wi-*; *aisa-*, *wa-*) and apical final themes (*bal-*, *in-*, *kwâs-*, *mâyun-*, *mun-*, *pâl-*, *prist-*, *sun-*, *ul-*). It is possible therefore that the number of true ø-theme verbs is more in line with the smaller total found in the Sumu languages. In any event, the observed ø-theme verbs are non-alternating, and the intransitive members of the reduced set include *aisa-* 'speak', *in-* 'cry', *kwâs-* 'crawl', *pâl-* 'fly', *prist-* 'do somersaults in play', items which correspond semantically to unergatives in many languages. We will not address here the question of whether the element referred to informally here as "zero" (ø) is a genuine thematic element (i.e., a verbal nucleus V) or whether, alternatively, the overt verb itself is the verbal nucleus in the argument structures projected by these verbs—this latter is a very likely story for the vowel-final verbs, which would then be verbs taking phrasal (i.e., XP) rather than bound root (R) complements.

## 5. Further considerations.

As mentioned earlier, a motive for this inquiry has been the questions it forces upon the lexicographer and the gaps and imperfections it reveals in a dictionary in the making. Although the focus of this investigation is narrow in the extreme, it nonetheless indicates the necessity for extensive review of the preliminary entries which we have at this point. An obvious question, of course, is whether verbs for which no transitivity alternation is recorded are in fact non-alternating. This can be done systematically with relative dispatch. More demanding, however, is the establishment of argument structure properties beyond formal transitivity. For example, if a verb refers to the removal of a part from a whole (e.g., 'to skin, peel'), what is the direct object—the part, the whole, or either? This kind of information is not systematically recorded in the Misumalpan dictionaries so far. And in the case of formal intransitives, what is the nature of the phrases which appear to function as their complements—are they complements, adverbial adjuncts? And what is the grammatical function of the nominal components of phrasal verbs like Miskitu *bil-a kaik-aia* (road-CNSTR see-INF) 'to wait for x' (lit. 'watch x's road') and its identically glossed Ulwa co-calque *tâ-ka tal-naka*. And what is the grammatical function of the "genitive" argument corresponding to x in these phrasal verbs? These are issues partly for the grammar and partly for the dictionary but, in any event, they must be acknowledged in the latter. They go beyond the matter of transitivity narrowly defined, and well beyond the restricted domain of the transitivity alternation which has been the main focus here.

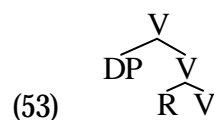
An interesting question which we will not be able to deal with adequately in this essay is that of the semantic character of the thematic elements which are such a prominent feature of Misumalpan verbs. Ulwa and Miskitu intransitives of alternating verbs are fairly consistently associated with change of state or position, suggesting that this semantic feature is to be attributed to the presence of the thematic markers *-da*, *-wa* (Ulwa) and *-w* (Miskitu).

A more interesting and challenging problem is that presented by the thematic elements appearing in the transitive members of alternating pairs, i.e., *-pa* and *-ta* of Ulwa and *-b* and *-k* of Miskitu. Is there a semantic basis for the selection of one or the other of these elements? A study of this matter has been initiated (Salamanca, 1998), focussing primarily on the semantics of Miskitu *-b*, including not only b-theme verbs with intransitive partners but also non-alternating transitive and intransitive verbs having this thematic element. Although the study is in its initial phases, certain statistical tendencies have been observed, for instance, the frequent occurrence of *-b* in Miskitu verbs of sound production, as in *ihbaia* 'neigh', *akbaia* 'bark', *kakbaia* 'cackle', *lingbaia* 'ring (as bell)', *kinghbaia* 'knock (on door)', *ahbaia* 'moan, wail', *wasbaia* 'whistle'. Not surprisingly, these verbs are sometimes (but not always) translated by pa-themes in Ulwa, *ih-pa* 'neigh', *auh-pa* 'bark', *wiu-pa* 'whistle'. The possibility that there may be a greater than chance correlation between theme type and meaning, and the fact that the

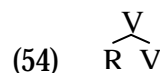
correlation extends across languages to some extent, is, of course, suggestive. But to determine whether there is more to this than a slight statistical bias, possibly the product of changes from an earlier system which was more reliably rule governed, is a question whose answer will require an investigation that goes beyond the restricted scope of the present study. It will also require dictionaries which are more nearly perfect than the ones we have available now.

As a final remark, we return to the matter of labile, or alternating, verbs—these present us with at least two questions, one empirical, the other theoretical. Both have to do with non-alternating verbs, in fact. We have only looked at two types of these, leaving others for a later study, but the point can be made quite well with what we have. The empirical question—more accurately, the data question—is simply this. Are the recorded non-alternating verbs truly non-alternating? Or have we simply failed to find one of the members in some alternating verb pairs. To answer this question, we simply have to check each apparent case—a relatively simple matter for a native speaker. A verb either alternates or it does not.<sup>9</sup> We will need to check apparent non-alternating verbs systematically until the time comes when we are so completely sure of the principles which govern Misumalpan verbal diathesis that it is no longer necessary to ask of a given verb whether it alternates or not. Our suspicion is that that time will never come, though it may very nearly come, as anyone can attest who has managed to get a "feel for" a language and for a grammatical phenomenon such as this.

In our earlier remarks about this issue (e.g., in relation to the ill-formed sentences of (41)), we noted merely that our conception of argument structure accounts in a natural way for the observed behavior of alternating and non-alternating verbs. Alternating verbs have the property that their verbal nuclei project a specifier, as in (44), a small clause configuration, repeated here as (53):



By contrast, non-alternating intransitives have the property that their verbal nuclei do not project a specifier:



<sup>9</sup>We over simplify, of course, but for the most part, speakers have clear and strong intuitions about this—thus, for example, while some English speakers may be unclear about a verb like *disappear*, no one, so far as we know is unclear about *appear*, *arrive*, or *arise*. Nor is anyone in doubt about unergatives like *cough*, *sneeze*, *cry*, *laugh*, even though their conventional translations in to some languages are in fact alternating verbs.

As noted in previous sections, if (54) is embedded in the complement relation to another verb, no interpretable verbal construction emerges, in particular, no transitive verb emerges, there being no specifier present in the inner verbal projection and hence no sentential syntactic object. On the other hand, if (53) is embedded as the complement of a verb, the construction which emerges is one of the major transitive types, i.e., that in which the sentential syntactic object governs, and assigns case to, the specifier (and subject) of a small clause.

This is hypothesis, and it may or may not turn out to be right. But it is necessary in order to frame the real question, which is this. How does the first-language learner of Miskitu or Ulwa acquire a grammar in which some verbs are classified as non-alternating? Or, to rephrase the question in terms of the hypothesis itself: how does the child figure out which verbs contain roots which force the verbal nucleus to project a specifier and which verbs to not.<sup>10</sup>

The answer to this question is trivial in some languages, where unergative verbs are explicitly built upon nominal roots—e.g., Basque, with unergatives conforming to the pattern *barre egin* (laugh do) 'to laugh'; and Tanoan, with similarly constructed unergatives (but with incorporation of the nominal), as in *híinl-'e* (laugh-V) 'to laugh'; and even English is arguably transparent in this regard, with its denominal unergatives like *laugh*. Once we determine that these verbs have nominal roots, we can suggest an explanation for their inability to transitivize in the standard manner—being nominal, and hence substantive as opposed to predicative, the roots of unergatives do not (and presumably cannot) force the projection of a specifier. In this respect unergatives contrast with labile deadjectival verbs—like *clear*, *redde*, for example—in which the root component is predicative in character and necessarily forces the verbal nucleus to project a specifier. The ability of deadjectival verbs to alternate follows straightforwardly, by hypothesis.

This is quite reasonable where the make-up of verbs is categorially perspicuous. In Misumalpan, however, the situation seems to us to be anything but perspicuous. Some alternating da-theme verbs in Ulwa might be built on adjectives, as we have seen, and this is of course compatible with our expectations, based on English and other languages which have deadjectival verbs of clear composition. But the status of roots in Ulwa is by no means clear—adjectives are themselves nominal in morphological category, and there is little that would lead us unerringly and unswervingly to any conclusion other than that "roots are simply roots." While it may be encouraging that

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<sup>10</sup>We will not consider here the "easy answer," namely, that according to which the default is non-alternating, the alternating verbs being learned as they appear in the data available to the learner. This would deny that any interesting principles are at work, principles strongly suggested by the cross-linguistic correlations observed in this matter.



some Ulwa alternating verbs are deadjectival, on the whole, the morphological make-up of a verb does not tell us what its syntactic behavior is going to be.

The Misumalpan case is very interesting, for this very reason. It presents the standard classification of verbs—unergatives and unaccusatives, the latter being the intransitive variants of verbs participating in the familiar causative/inchoative alternation. The verb classes are not in doubt, and the syntactic behavior is completely ordinary. But where does the evidence for the classification come from? How does the child learn the system? The answer surely involves semantics, the meanings of the verbs. But we are back at the beginning. Our reasoning is properly circular, because the meanings are themselves partly due to the structure we hope to establish. Moreover, as linguists our understanding of verbal meanings is too primitive to lead us straight to the principles—we are stuck with observable syntactic behavior and lists, neither of which we can predict fully as yet. But the kids get it right somehow, so something must be working for them. We will have to do our best to ensure that the dictionary contain the information (the behavior and the lists) that will enable us ultimately to understand the principles behind it all.

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